

Science Excellence Initiative

		2006 Actual	2007 CR	2008			Change From 2007 (+/-)
				Fixed Costs & Related Changes (+/-)	Program Changes (+/-)	Budget Request	
Science Excellence (\$000)		493	493		-493	0	-493
Highly Pathogenic Avian Influenza Funding (\$000)		7,398	7,398		0	7,398	0
Total, Science Excellence Initiative (\$000)		7,891	7,891		-493	7,398	-493
	FTE	13	13		-2	11	-2

Summary of 2008 Program Changes for Science Excellence

Request Component	Amount	FTE
• Adaptive Resource Management Partnerships on NWRs	-200	-1
• Adaptive Resource Management Consultancies	-150	0
• Communities of Practice	-143	-1
Total, Program Changes	-493	-2

Justification of 2008 Program Changes

The 2008 budget request for Science Excellence is \$0 and 0 FTE, a net program change of -\$493,000 and -2 FTE from the 2007 President’s Budget.

Science Excellence Initiative (-\$493,000/-2 FTE) – By eliminating funding for Science Excellence, the Service will be able to redirect resources to higher priority needs. This redirection will preclude the Office of the Science Advisor from further supporting activities at current levels or that would otherwise expand the Service’s on-the-ground scientific capacity in adaptive resource management (ARM), structured decision analysis (SDA) and conservation genetics (CG).

1. Adaptive Resource Management Partnerships (ARM) on NWRs. Since FY 2006, the Office of the Science Advisor has provided \$200,000 annually to help sustain a unique science partnership between the Service and the U.S. Geological Survey. The Service and USGS have collaborated in the application of ARM principles and practices on National Wildlife Refuges in Regions 3 and 5 to improve refuge planning and management. On-the-ground research projects conducted jointly by scientists from both bureaus have produced valuable information about relationships between habitat management techniques, especially wetland drawdowns and prescribed burning, and the distribution, abundance and behavior of waterbirds.
2. Adaptive Resource Management Consultancies. Since FY 2006, the Office of the Science Advisor (OSA) has provided \$150,000 annually to ensure that Service managers in the field have access to the expertise and assistance they need to make more frequent use of the principles and practices of ARM in managing trust resources and other priority habitats and species. OSA has provided \$80,000 annually to enable scientists in the Service and USGS who have specialized expertise in adaptive resource management to assist refuge managers in Regions 3 and 5 in designing and implementing research projects intended to improve refuge planning and management on-the-ground, as described in #1 above. In addition, OSA has provided \$70,000 annually to help the Service’s Fisheries Program make more frequent use of ARM practices and principles in its National Fish Habitat Initiative. Specifically, OSA has provided funding that has enabled the Fisheries Program and its state partners

to be more effective in increasing the movement, distribution and abundance of brook trout and other native fishes by removing barriers to fish passage.

3. Communities of Practice (COP) in Structured Decision Analysis and Conservation Genetics. Since FY 2006, the Office of the Science Advisor has supported two communities of practice of special importance to the Service. The first community is comprised of Service employees and USGS employees with special expertise in structured decision analysis (SDA). Members of this community interact regularly to help expand the Service's capacity to apply the principles and practices of structured decision analysis to its resource planning and resource management activities, as well as to its regulatory responsibilities under the Endangered Species Act and Marine Mammal Act. Application of SDA principles and practices has enabled the Service to document, explain and defend its decisions more thoroughly and more effectively. The second Service COP, which was fledged during the latter half of FY 2006, is focused on expanding the Service's capacity in conservation genetics. Activities are focusing on conservation genetics issues facing the Service's Fisheries Program. The Office of the Science Advisor plans to expand the membership of this community in the future to include other Service programs.

The requested elimination of funding for these activities will reduce the Service's abilities to expand and perhaps maintain its scientific capacity in adaptive resource management, structured decision analysis and conservation genetics. Additional funding and support from the Service's conservation partners or elsewhere could mitigate these effects.

Program Performance Change

	2004 Actual	2005 Actual	2006 Actual	2007 CR ¹	2008 Base Budget (2007 PB + Fixed Costs)	2008 Plan	Program Change Accruing in 2008	Program Change Accruing in Outyears
					A	B=A+C	C	D
Comments	Measure: Soundness of methodology, accuracy and reliability of science. As measured by the annual increase in the number of FWS employees with mastery and expertise in:							
Adaptive Resource Management (ARM)			5	5	0	5	-5	0
Structured Decision Analysis (SDA)			3	3	0	3	-3	0
Conservation Genetics (CD)			1	3	0	3	-3	0
Comments	Measure: Percent of managers who indicate their workforce has the job-related skills necessary to accomplish their jobs [Target = 100%]. As measured by the annual increase in the percentage of FWS offices with competency in:							
Adaptive Resource Management (ARM)			5	5	0	5	-5	0
Structured Decision Analysis (SDA)			2	2	0	2	-2	0
Conservation Genetics (CD)			1	3	0	3	-3	0
<p>1 The performance and cost data in the 2007 CR column is presented at the 2007plan level, which is based upon a projection of 2007 likely enacted made during the first quarter of 2007. The 2008 plan builds on the 2007 plan. To the extent Congress enacts a 2007 appropriation that is different from the 2007 projection, the 2008 plan may require revision.</p> <p>Note: Projected costs may not equal program change as these are full costs, which may include funds from other sources and (or) use averages.</p> <p>Column A: The level of performance and costs expected in 2008 at the 2007 President's budget evel plus funded fixed costs. Reflects the impact of prior year funding changes, management efficiencies, absorption of prior year fixed costs, and trend impacts, but does not reflect the proposed program change.</p> <p>Column D: Outyear performance beyond 2008 addresses lagging performance — those changes occurring as a result of the program change (not total budget) requested in 2008. It does <u>not</u> include the impact of receiving the program change again in a subsequent outyear</p>								

Program Overview

Scientific Excellence Initiative provides Service scientists with knowledge, skills and infrastructure to ensure that fish, wildlife and their habitats are protected and managed effectively and efficiently, and that they remain available for public use and enjoyment. The Science Excellence Initiative (SEI), through the Office of the Science Advisor, provides the strong executive leadership needed to position and help prepare the Service to meet the many science challenges inherent in its complex mission. Priorities are established in close coordination with the Directorate and Directors Office and are sensitive to and supportive of initiatives developed by the Department of the Interior and OMB, like those associated with peer review, data stewardship and the Information Quality Act. Activities are typically carried out with participation and support from Service programs that have scientific expertise and demonstrate scientific excellence.

The Science Excellence Initiative provides executive leadership in working closely with and through the Service Directorate to help the Service achieve three key goals:

Goal 1: Maintain and help expand, where possible, the fundamental competencies of the Service's scientific staff and the fundamental capacities of its science facilities;

Goal 2: Demonstrate leadership and excellence in following appropriate scientific practices and procedures in its work; and

Goal 3: Foster productive relationships and interactions among its scientists, scientists elsewhere, and with resource managers.

These three goals fit efficiently within the broader strategic planning frameworks used by the Service and the Department. The SEI indirectly supports three DOI Mission Goals: 1) Resource Protection Goal 1.1 [healthy watersheds and landscapes], 2) Resource Protection Goal 1.2 [sustainable biological communities], and 3) Recreation [Goal 3.1]. Because the SEI enhances and sustains the performance of biologists and other scientists in all Service programs and because the performance of those employees is inextricably linked to their science knowledge and science skills, the best way of describing the overall contribution of the SEI to the Department's strategic plan and the Service's conservation mission is by focusing on the *Serving Communities* Mission Area, and the *DOI Management Excellence* Goal. See the Performance Overview Table.

The Office of the Science Advisor relies on four basic strategies to accomplish the aforementioned goals of the Science Excellence Initiative:

Strategy 1: Assess the Service's scientific foundations

Strategy 2: Build additional science infrastructure

Strategy 3: Build key partnerships

Strategy 4: Conduct key special projects

Use of Cost and Performance Information

The Science Excellence Initiative (SEI) contributes to the Service's and Department's performance by *Advancing Knowledge through Scientific Leadership and Informing Decisions through Science* (End Outcome Goal 2 of the *Serving Communities* Mission Area), and by ensuring that the *Workforce Has Job-related Knowledge and Skill Necessary to Accomplish Organizational Goals*, which is End Outcome Goal 1 of the *Management Excellence* Goal.

- SEI completed an internet-based survey in FY 2006 to determine how Service employees and the Service as a whole benefit from interactions with and memberships in professional societies, particularly The Wildlife Society and the American Fisheries Society, and how professional societies benefit from involvement of Service scientists. The survey, which was conducted with the assistance of specialists in science policy and science assessment at Cornell University, is helping the Service's Directorate gain important insights into specific ways the Service can enhance the knowledge, skills and professionalism of its scientists and also into specific ways the Service and its scientists can collaborate more effectively and efficiently with professional societies to help conserve fish and wildlife.
- Almost 4000 Service employees in the fields of fisheries, wildlife, forestry, hydrology, ecology, toxicology, biometrics and forensics were invited to complete the survey. Almost three-quarters of them responded and provided the Office of the Science Advisor with a wealth of information that is being analyzed during the first half of FY 2007. This information will be used during the latter half of FY 2007 and early in FY 2008 to establish clear policy, expectations and standards concerning employee participation in professional societies and concerning partnerships with professional societies.
- The Office of the Science Advisor expects that increased participation of Service employees in professional societies will enhance the effectiveness of Service scientists and increase the scientific credibility, capacity and mission-success of the Service as a whole.

		2006 Actual	2007 CR	2008			Change From 2007 (+/-)
				Fixed Costs & Related Changes (+/-)	Program Changes (+/-)	Budget Request	
Avian Influenza	(\$000)	7,398	7,398		0	7,398	0
	FTE	11	11		0	11	0

Program Overview

Avian influenza viruses are naturally associated with wild birds, especially migratory waterfowl and shorebirds. Although movement of avian influenza viruses from wild birds to domestic birds or mammals is not a common event, when it does occur, it can result in evolution of a “new” virus adapted to a new host population. Such “new” viruses can cause disease in the host population, including humans.

Since 1997, a highly pathogenic (HPAI) Eurasian strain of H5N1 avian influenza has become endemic in poultry flocks in Southeast Asia and has spread to Central Asia and Eastern Europe. A worrisome feature of this highly pathogenic strain of avian influenza is its ability to infect and cause illness or death in wild birds and humans. Although the virus has not yet shown an ability to transmit efficiently from one human to another, there is concern that it will acquire this ability through mutation or genetic exchange.

In July 2005, the Homeland Security Council’s Biodefense Policy Coordination Committee on Avian Influenza and Pandemic Flu Preparedness tasked the Department of the Interior and Department of Agriculture with preparing and implementing a strategy for surveillance and early detection of Eurasian H5N1 virus in wild migratory birds in the United States. The Fish and Wildlife Service is especially well-suited for these tasks because of its unique responsibilities for migratory birds; its special expertise in the ecology, movement and behavior of these birds; and its history of monitoring bird populations and collecting biological data on continental scales. The Service enjoys a close and productive relationship with the U.S. Geological Survey, which has assets and capabilities that complement those of the Service, especially the Survey’s expertise in wildlife disease and in avian biology and ecology, its long history of conducting research on wild birds and their migrations, and its network of research centers and scientists across the country.

Because of the potential for wild birds to carry and transmit the Eurasian H5N1 virus, Congress provided \$7,398,000 to the Service in FY 2006 to implement an early detection program. In the space of twelve months, the Service established interagency partnerships that successfully crafted a national surveillance strategy, engaged four Flyway Councils in stepping down that strategy to the regional level, stood up a highly effective field capability through seasonal hires and agreements with state wildlife agencies and other cooperators, and collected nearly 20,000 samples from wild birds throughout the Pacific Flyway and the Pacific Islands to be tested for the presence of the highly pathogenic H5N1 avian influenza virus. Because surveillance needs could have changed quickly as the scientific community’s understanding of the ecology of the Eurasian H5N1 influenza virus and the risk to wildlife, agriculture and public health evolved, the Service and USGS remained prepared throughout FY 2006 to realign funding and staffing to address emerging priorities.

The avian influenza funds and FTE for FY 2006 were managed and allocated separately from other funds available to the Office of the Science Advisor for the Science Excellence Initiative. Ninety-nine per cent of the funds appropriated for avian influenza in FY 2006 were allocated to the Service’s field and regional offices.

In FY 2007, the Service and USGS are continuing to work together and with other federal agencies, the Association of Fish and Wildlife Agencies (AFWA), and state fish and wildlife agencies to implement detailed strategies for surveillance for the Eurasian H5N1 virus. Participants in the surveillance program are working closely to develop effective programs for FY2007. They are revising those programs based on their FY 2006 experiences and data. In addition, they are incorporating the latest scientific information concerning the behavior and movement of the Eurasian HPAI H5N1 virus in wild birds and in commerce.

In addition, the Service is working to complete a response plan for the occurrence of the Eurasian HPAI H5N1 virus in wild birds, in coordination with the Department of Agriculture and the states. Arrangements are being made to engage Service personnel in interagency response exercises to ensure the Service is prepared for an occurrence of HPAI in wild birds in the United States.

Because of its broad responsibilities for science excellence, its close working relationship with USGS and other science organizations, and its efficient and effective coordination of the Service's avian influenza activities in FY 2006, the Office of the Science Advisor will continue to lead and coordinate the Service's monitoring and surveillance activities. Management responsibility for funds appropriated for avian influenza will continue to reside with the Office of the Science Advisor and funding needed to support the Service's avian influenza activities will continue to be requested under the Science Excellence Initiative.

During FY 2007, funds provided to the Service for avian influenza will continue to be allocated to the Service's field and regional office operations by the Director's Office. As was done in FY 2006, funding will be allocated to the regions to enable field level staff to undertake activities related to the prevention and detection of HPAI as described below.

2008 Program Performance

The Science Excellence Initiative will continue to focus on the three goals identified above. Focus areas, performance goals and performance targets will largely remain the same as those for FY2007, except as affected by the proposed elimination of funding (\$493,000) for Science Excellence. The Office of the Science Advisor will continue to provide **strong executive leadership** and collaborate with Directorate members to perform the activities below.

Goal 1: Maintain and help expand, where possible, the fundamental competencies of the Service's scientific staff and the fundamental capacities of its science facilities.

- Provide leadership, direction and coordination to ensure the Service continues to implement early detection programs for the Eurasian HPAI H5N1 virus in wild birds. The Office of the Science Advisor will continue to:
 1. Represent the Director's Office in internal and external activities involving the Eurasian H5N1 virus, which includes coordination and communication with the Department of the Interior, and representation and involvement with the Department of Homeland Security;
 2. Ensure that the Office of the Secretary is regularly informed of the results of early detection activities conducted jointly by the Service and USGS; and
 3. Employ an adaptive framework to respond to needs associated with the Eurasian H5N1 virus, including:
 - Coordinating design of early detection activities within the Service and with USGS.
 - Reporting results of early detection activities and reassessing appropriateness of monitoring activities.
 - Advising the Director concerning needs for additional Service capabilities and activities with respect to the Eurasian H5N1 virus.

- Provide leadership and continue to encourage and support application of adaptive resource management (ARM) to fish and wildlife management challenges. Training, workshops and pilot projects first used in FY 2007 to increase knowledge and grow ARM capability in the Service will continue in FY 2008 under the leadership of the Office of the Science Advisor.
- Finalize a vision and strategic plan for science in the Service. Development of this vision and plan is scheduled to begin during the latter half of FY 2007. The science vision and plan are expected to aid the Service in identifying and prioritizing mission-critical gaps that may exist in the Service's science competencies, capacities, practices, relationships and interactions.
- Provide leadership and work closely with the Science Committee and Directorate Oversight Council to actively promote publication of scientific information and dissemination of results of scientific investigations conducted by Service scientists.

Goal 2. Demonstrate leadership and excellence in following appropriate scientific practices and procedures in the work of the Service.

- Provide leadership and work closely with the Service Directorate, Science Committee and external science partners, particularly USGS, to develop and utilize scientific practices and standards that ensure the Service conducts high-quality science. Attention will focus on: 1) meeting expectations and directives from Congress, OMB, and DOI concerning the Data Quality Act, peer review, and data stewardship; and 2) publishing and disseminate the results of scientific investigations and management activities conducted by Service scientists.
- Provide guidance, direction and monitoring to assist the Service in complying with the Information Quality Act (IQA) and process challenges that arise under the IQA.
- Provide guidance and direction to assist the Service in implementing the DOI's *Biological Resources Data Framework*. Attention will focus on meeting standards for storage, use and transportability of biological data and on monitoring and reporting Service performance .
- Provide direction to assist the Service in complying with requirements of OMB's *Peer Review Bulletin* and help maintain a website for listing ongoing and completed reviews.
- Provide leadership and engage in short-term (1-5 years) activities that are vital to: 1) develop new ideas and approaches, like for strategic habitat conservation, that hold promise for improving the Service's science foundations; 2) demonstrate the effectiveness and attractiveness of new ideas and approaches, like for structured decision analysis, that have been used successfully in localized parts of the Service or on broader scales outside the Service; and 3) assemble expertise and personnel to address especially important conservation issues and challenges, like for avian influenza and climate change.
- Absent the proposed program changes, collaborate with USGS to continue to help support an adaptive resource management (ARM) project involving National Wildlife Refuges in Regions 3 and 5. The Service and USGS have been using information generated from this study to adjust refuge management plans and guide operational activities, as well as to design additional studies and monitoring programs that will further improve refuge operations in future years.
- Collaborate with the Migratory Bird Program to complete the research and management needs database for 16 key species of webless game birds and to develop criteria that the Service and states can use to establish research priorities.

Goal 3. Foster productive relationships and interactions among Service scientists and with scientists elsewhere and with Service managers

- Provide leadership in maintaining and nurturing partnerships with other federal agencies, states, and conservation organizations and that have proven productive and beneficial.

- Provide leadership in working closely with The Wildlife Society (TWS), American Fisheries Society and other professional societies to enhance collaboration, share scientific information and promote employee and organizational development.
- Ensure that the USGS Science Support Program (SSP) addresses the Service's highest priority research needs and produces results that meet the Service's science needs.
- Continue to use partnerships with USGS, particularly with the Cooperative Research Units and Science Centers, and with the Association of Fish and Wildlife Agencies and conservation organizations to develop, access, and disseminate science information and science tools that can be used to address regional and national resource challenges.

Program Performance Overview

<i>End Outcome Measures</i>	2005 Actual	2006 Plan	2006 Actual	2007 Proposed	2008 Proposed	2008 Change from 2007 Proposed
Soundness of methodology, accuracy, and reliability of science, as measured by % of employees in scientific positions who publish scientific findings. ¹ [Target = 25%]	11% 488/4435	12.1% 537/4435	n/a ²	13.2% ³ 585/4435	14.3% 634/4435	1.1% + 49 (6343-585)

¹ Baseline data for FY 2005 Actual came from the *Web of Science*, as reported in a survey completed jointly by the Service and USGS in late in FY2005 (Citation: *Quantity, Quality, and Support for Research in the U.S. Fish and Wildlife Service: An Organizational Overview*. USGS Open-File Report 2005-391. 173 p.)

² Data for FY 2006 will be available from the *Web of Science* during the latter part of FY 2007 and will be used to progress made against the FY 2006 performance target.

³ The Service is expected to develop new policies and mechanisms that will encourage employees to publish more often. As a result, we anticipate a net gain of 1.1% in the percentage of FWS employees who publish in FY 2007 and in FY 2008, with larger percentage increases occurring in FY 2009 and thereafter as employees enjoy the benefits of the publishing policies and mechanisms expected to be implemented in FY 2007. The extent of these expected outyear increases will depend on decisions made by the Directorate during the latter half of FY 2007. Additional resources will most likely be required to meet the target, i.e., that 25% of Service scientists will publish in one of more of the Service's publication outlets or series at least once each year.